FINAL REPORT ON REUSE OF AUTOMOTIVE ACOUSTICAL DAMPENING MATERIAL

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FINAL REPORT ON

REUSE OF

AUTOMOTIVE ACOUSTICAL

DAMPENING MATERIAL

(IWDP PROJECT)

Report prepared by:

Rieter Automotive Mastico Ltd.

Report prepared for:

Ontario Ministry of Environment and Energy

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Rieter Automotive Mastico Ltd.
Final Report on Reuse of
Automotive Acoustical Dampening Material

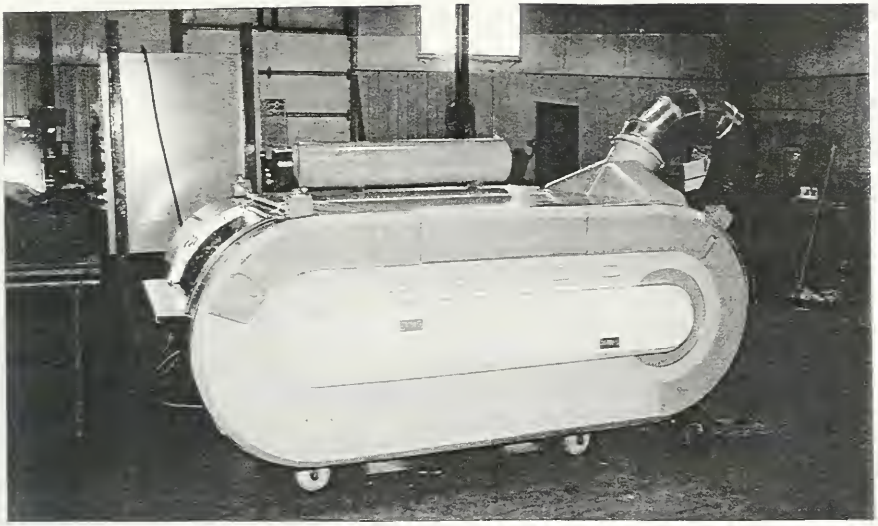
ABSTRACT

Rieter Automotive Mastico Ltd. (Mastico) successfully developed a process to recycle 5,000 tons/year of automotive acoustical dampening material into new products. Automotive acoustical dampening material is used in cars to reduce noise and is known in the automotive industry as mastic. Mastico manufactures the scrap mastic in sheets and then cuts it to fit the automotive parts. The remainder of the mastic sheet is waste which was being sent to landfill. The mastic is made up of a fibre mat from .25 - .75 inch in thickness which is held together by a thin (.003 inch) backing made of a polyethylene, asphalt and limestone mixture.

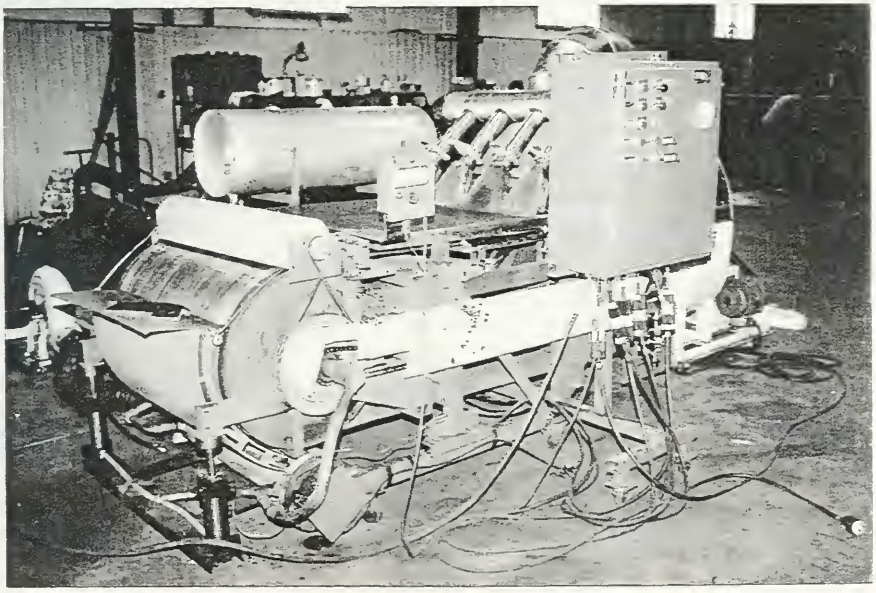
To recycle the mastic waste, the fibre mat must be separated from the backing. In the project discussed in this report, a company called 3R$ developed a piece of equipment called the Adhesive Recovery Concept (ARC) to do this for Mastico. In their process, the mastic waste is fed to the ARC machine where a rotating metal belt melts the polyethylene in the backing. The polyethylene is then cooled rapidly to prevent the asphalt in the backing from melting. The ARC machine then mechanically separates the fibre mats from the softened backing and scrapes the poly asphalt mixture from the belt. The fibre mat can now be reused as is while the backing requires further processing.

Automotive
Acoustical
Dampening
Material

ARC MACHINE



INNER WORKINGS OF THE MACHINE



INTRODUCTION

General Background:

Mastico Industries Limited of Tillsonburg, Ontario are leading edge producers of mastic acoustical dampening material for the automotive manufacturers worldwide. The product consists of a .003" polyethylene backing overlaid with varying thicknesses (.125" - .313") of 30% asphalt and 70% powdered limestone adhered to .25" - .75" of fibre mat. The fibre mats may be mechanically needled or loomed or developed by curing phenoxy resins with natural fibre using air laying equipment in tandem with curing ovens.

Reasons for the Undertaking:

Mastico Industries had been attempting for several years to develop a method of reusing the 5,000 tons per year of scrap mastic/fibre material to divert it from landfill. To this end, the company had unsuccessfully spent approximately $500,000 within a six-year period in chemical and centrifugal separation techniques to separate the poly/asphalt/limestone backing from the fibre. At this point, Mastico decided to try to develop the ARC concept suggested by Professor Marsun Lipsit of Fanshawe College. Professor Lipsit ran an industrial waste handling prototype company called 3R$, a division of 922114 Ontario Inc., in London, Ontario.

Initial laboratory experiments conducted by Professor Marsun Lipsit had demonstrated to Mastico a potential method of stripping and recovering the fibre. The residual polyethylene, asphalt, limestone and residual fibre was simultaneously demonstrated to be recyclable into a homogeneous asphalt, limestone product. This secondary process involved the cracking of the complex plastic poly and fibre into a reusable form.

Proposal to Ministry of Environment and Energy:

The proposal was submitted to Ministry of Environment and Energy's (MOEE) Industrial Waste Diversion Program. The objective of the project, to divert waste from landfill, fit the mandate of the Program. The MOEE accepted Mastico's proposal and approved a grant of $346,789. The progress and expenditures were regularly monitored by the MOEE's Waste Reduction office.

THE PROJECT

Objective:

The objective was to develop a mechanical system which would partially melt and adhere the surface of the polyethylene backing of the mastic to a metal belt, quickly cool it to avoid melting the asphalt, strip off the fibre for reuse and finally scrape off the poly asphalt for reuse.

Method:

1. The development of a metal belt which would continuously heat the polyethylene backing to its melt point to adhere the poly to the belt. Subsequently, the belt had to be cooled to avoid the melting of the asphalt.

2. The development of a roller drum assembly which would continuously and consistently lend itself to reheating and recooling.

3. The development of a metal belt guidance system which would not fatigue the belt.

4. The development of a drum heating system to perfectly hold the melt temperature of the polyethylene.

5. The development of a cooling system which would cool the metal belt quickly to avoid melting the asphalt.

6. The development of a mechanical means of stripping the fibre from the adhered mastic product.

7. The development of a scraper system which would remove the poly/mastic product from the belt.

8. The development of thermal shielding to isolate the heating and cooling mechanisms from each other and exterior thermal influences

9. The development of conveyance systems to feed the product into the machine and to remove the final mastic and fibre materials.

Observations:

1. Stainless materials retained the heat required to melt the polyethylene and made the asphalt flow freely over the belt without holding the fibre in place to be mechanically stripped because of the liquid state of the asphalt. Conductivity was the key issue. An aluminum alloy was developed which lent itself to heating from ambient to 300° F in 10 seconds and subsequential cooling to 120° F in 3.0 seconds.

2. Two mild steel rollers of 26" diameter were used to rotate the belt. One drum was fitted with a 40 k.w. immersion heater, surrounded by a thermal fluid. To accommodate thermal expansion and contraction, an overflow tank of 30% of drum volume was added. The second drum accumulated heat delivered by the belt and subsequently had to be cooled using a 1,500 C.F.M. fan located internally.

3. Roller and pressure devices developed to bring pressure on the belt to guide it proved unsuccessful. Any reverse pressures on metal belts fatigued them within one hour of operation. By developing a pivot system for the primary drum and using an air balance developed by Fife Corporation in Oklahoma City, Oklahoma, a hydraulic cylinder tipped the primary drum and kept the belt in line without fatiguing the metal belt.

4. The heating in the primary drum was controlled by a P.L.C. (Programmable logical computer). Macro Sensing was controlled by a thermocouple located centrally in the drum for which micro control was achieved by a surface rotational thermocouple. The control system retained temperatures when properly shielded within +2° F and could not drop below the preset temperature as polyethylene would not adhere to the aluminum belt at a lower heat. Adjustments had to be made daily depending on ambient air temperatures and humidity.

5. Trials on the cooling system were unsuccessful using water misting. The water mist created an electrical discharge which pinholed the heating drum and crumpled the belt. Trials with cold air generated by compressor type air conditioners were also unsuccessful. Experiments with a 0 - 5,000 C.F.M. fan using the shear action of ambient air distributed at 1/3 intervals over the belt proved to be the answer. A high velocity pneumatic material handling system, developed for the stripped fibre conveyance, removed the air produced by the air shear back and away from the heating drum. Again great variation in proper velocities were noted dependent on ambient air temperatures and air humidity. The cooling system was controlled manually.

6. Trials to strip the fibre were initiated using a metal cylinder, slotted and fitted longitudinally with six, 1060 carbon serrated blades. The device driven by a 1.5 h.p. motor worked well on loomed and needled fibre mats. It did not work successfully on the semi-cured phenolic resin fibre materials. To meet success on this product, blades resembling circular saw cross cut blades were assembled spirally around the cylindrical shaft. With the increase of horsepower to 3 h.p., the fibre was successfully reclaimed.

7. The aluminum belt provided a real challenge for the removal of the .003" polyethylene adhered to it. Eventually a plastic scraper, which would not damage the belt but had thermal properties to withstand the elevated temperatures, was developed. The plastic scraper blade was cut into 4" sections mounted on a double #80 chain and rotated over the face of the belt to remove the poly. Build-up on the sectioned scraper meant the development of a brush and varsol solution to clean the segmented scraper as it returned on the lower side of its sprocket system.

8. The prototype developed in the open had to be thermally shielded because of the high conductivity of the belt. Neoprene belting laying flush against the belt diverted any excess air developed by the cooling system towards the fibre material collection hood and away from the heating drum. A 1" air gap heat shield placed 50% around the heating

drum provided sufficient insulation to maintain the temperature to melt the polyethylene at 20° before top dead centre on the primary drum. Expanded metal offered relief to any air pressure which developed within the shroud. This air was diverted from the machine and did not influence the temperature of the metal belt.

9. The fibre was conveyed pneumatically. Initially a rock trap removed any fibre which had picked up any mastic product. The material was then delivered to a fibre baler where 700 lb. bales were produced and delivered for fibre reuse. The system was cleaned by a Wise Dust Collection System. The mastic material was mechanically conveyed to a dumpster where a methodology was developed to heat the mixture to 400° F which melted the asphalt, the polyethylene and any remaining fibres into a homogeneous asphalt-like product.

RESULTS and CONCLUSIONS

Results of the technical aspects of the A.R.C. process have been discussed under the heading Observations. The project has not been fully completed at the time of this report.

Additional installation costs of A.R.C. equipment amounted to $93,424 above the estimate. These costs included a $20,000 electrical service and $73,424 of accessory requirements such as structural steel frames to house fans, motors, a dust collection system, a density fibre air classifier and a baler.

As initial production trials commenced using two persons to feed the A.R.C. unit, it became obvious that pulling scrap mastic from a gaylord or dumpster was not effective. Tangled waste had to be literally pulled apart - this was both inefficient and fatiguing. 3R$ proposed a flat belt conveyance system from the end of the die cutting operation, delivering the scrap directly into the A.R.C. unit. This system was built at a cost of $20,000. The conveyor retrieved the waste and delivered it evenly into the recovery unit. Results improved dramatically. Less heat control and cooling adjustment was required because of the constant load conditions. Efficiencies skyrocketed despite the fact that the final conveyor link was not in place and materials were still being hand placed on the conveyor. Efficiencies increased primarily from the fact that the waste was now spread out on the floor and no longer tangled. Efficiencies could only improve once the final conveyor link was installed.

Here an unforeseen safety problem arose. The final conveyor link would have to cross the main employee entrance walkway. The Safety Committee, using the Occupational Health and Safety Act, was reluctant to accept this condition. The only solution was to await the construction of an addition to the plant and redesign employee entrances, cafeteria, washrooms and change room. The project has been on hold awaiting those building modifications. At that point, 3R$ will again link up the conveyance system and finalize the anticipated diversion targets, returning the fibre into production.

Mastico completed these renovations but still had some remaining logistical concerns. Mastico has now reached an agreement with Professor Marsun Lipsit, the developer of the ARC process, to build a separate facility to recycle this waste. This facility will be situated close to the Mastico plant and will accept the acoustical dampening material, separate it and return the material to the plant for reuse. This facility, to be called Green Court, may expand to accept wastes from other manufacturers of acoustical dampening material as well.

Re: Asphalt, limestone & polyfilm

The reuse of the residual poly, asphalt and limestone is currently considered too expensive by Mastico because a $700,000 Sigma Mixer is required for quality assurance. The poly asphalt must be an exact 30% asphalt and 70% limestone mix to meet the contractual standards. Although 3R$ believes that this would be viable due to the completeness of the fractionating process, development of another reuse application has been sought by 3R$. These uses have included cracking the waste product and reusing it in the shingle manufacturing and in asphalt paving operations.

COST RECOVERY CONCLUSIONS

FIBRE RECOVERY BY A.R.C. MACHINE

Savings by diversion of fibre from landfill:

1,000,000 lbs. recovered fibre at a purchase price of $.12/lb.	$120,000
Plus savings of landfill and transportation costs at $30/ton (500 tons) for	15,000
	$135,000
Grant given by MOEE for A.R.C. project	$346,789
Additional to grant money - 5,000 hrs. of engineering @ $30/hr.	$150,000
Accessory equipment and hook-up paid by Mastico	92,168
Total cost of project ...	$588,957

The current machine retails at $225,000 Cdn. and the payback based on the recovery of 1,000,000 lbs. of fibre alone would be $225,000 divided by $135,000
= 1.6 years.

Polyethylene, Asphalt and Limestone Recovery

Poly asphalt recovery must compete with a cost of new product at $.037/lb. F.O.B. Tillsonburg. The recovered amount of the poly asphalt is 60% of the total weight to be landfilled which is 5,000 tons annually.

60% of recovered poly asphalt x 5,000 tons annually	=	3,000 tons
Only 80% of 3,000 tons is poly asphalt. The other 20% is the weight of the fibre. 80% of 3,000 tons	=	2,400 tons.
2,400 tons x 2,000 lbs. (1 ton equals 2,000 lbs.)	=	4,800,000 lbs.
4,800,000 lbs. @ $.037/lb.	=	$177,600

The value of the recovered poly asphalt to Mastico is $177,600 instead of purchasing this same product as new material.

Haulage and tipping fees added a cost to Mastico of	=	$72,000

Total savings to Mastico from the project:

Recovered value of the poly asphalt	$177,600
Savings in haulage and tippings fees to landfill	72,000
Total annual savings	$249,600
Estimated cost of prototype fractionating equipment	$125,000
Sigma Mixer estimate	$700,000
Total cost for additional equipment	$825,000

Payback would be $825,000 divided by $249,600 = 3.31 years - the equivalent of a 3.31 year payback plus operating costs.

Currently Mastico only considers capital equipment investments of 2 years or less and hence other uses for the waste are deemed appropriate.

CONCLUSIONS

In conclusion, Mastico, in conjunction with 3R$, has successfully developed:

- A method of adhering plastic products to a metal belt for subsequent stripping of adhered products to the plastic.

A method of cooling plastic product to metal belting in less than 2 minutes using ambient air.

A method of removing adhered plastic to metal belting with minimal wear to soft metal belts.

A method of fractionating polyethylene and person-made fibre into asphalt like product.

They also proved:

Water cannot be used to cool dissimilar metals above 260° F in contact with each other.

Conventional air conditioning systems are not cost effective in the A.R.C. process.

Humidity and ambient air temperature bears a relationship and strong correlation to the use of ambient air for cooling.

Conventional knife type scrapers cannot be used to remove materials adhered to soft metal belts where clearances of $<.003$" are required.

Metal belting performs well when continuously rotated on drums of greater than 20" in diameter.

Metal belts fatigue quickly if a downward pressure is applied to the surface of a non supported area in a 90° direction to its plane of travel.

Metal belts can be directed by rotating the driver head shaft in a plane vertical to the movement plane of the metal belt without metal fatigue.

Constant loading of materials rather than intermittent loading created less fluctuations in metal belt temperatures.

Air currents had profound influences on metal belt temperatures and protective shielding had to virtually isolate the belt including any imposed ambient cooling from the heat source.

Air pressure relief systems must be negatively relieved, not just vented to atmosphere in order to control air flow within shielded areas.

SUMMARY CONCLUSION

The A.R.C. concept of adhering polyethylene to a rotating aluminum belt to remove the fibre mat and the subsequent stripping of the plastic with its poly asphalt layer from the metal belt was clearly and profoundly demonstrated in an industrial setting in a cost effective manner.

Further information should be requested by agreement with Rieter Automotive Mastico Ltd. from Professor Marsun Lipsit, 3R$, a division of 922114 Ontario Inc., 251 Conway Drive, London, Ontario N6E 3J5. (519-681-1301)

SUMMARY DO'S AND DON'TS

As with any new, innovative, first-of-its-kind project, a lot of time is used in telephone sourcing, leg-work, false information, trying to find anyone knowledgeable in specialized areas where one would require information. All in all, considerable time is wasted in any new venture just trying to get it off the ground.

A good DO would be for the government to have a hot-line for new venturers to call for specialized information and sources. An example of this would be: without prior knowledge of working with aluminum, much effort and time was put into sourcing a means of forming an aluminum belt. A trip to a U.S. manufacturer in Spokane, Washington, a welder for Air Canada airlines, calls to Germany for a special glue used on 747's, and finally a phone call to the NASA

Space Centre in Florida revealed that such an endeavour could be accomplished by a company right here in London!

A similar experience led 3R$ to Switzerland and back to Kitchener, Ontario on specialized stainless steel knowledge. An expert on rapid heating and cooling of metals was never found, although they must exist - but not through sources known to 3R$, nor are they in normal directories.

The DON'Ts are covered in the conclusion section of this report and are repeated below:

Water cannot be used to cool dissimilar metals above 260° F in contact with each other.

Conventional air conditioning systems are not cost effective in the A.R.C. process. Humidity and ambient air temperature bears a relationship and strong correlation to the coolant use of ambient air.

Conventional knife type scrapers can not be used to remove materials adhered to soft metal belts where clearances of $< .003$" are required.

Metal belting performs well when continuously rotated on drums of greater than 20" in diameter.

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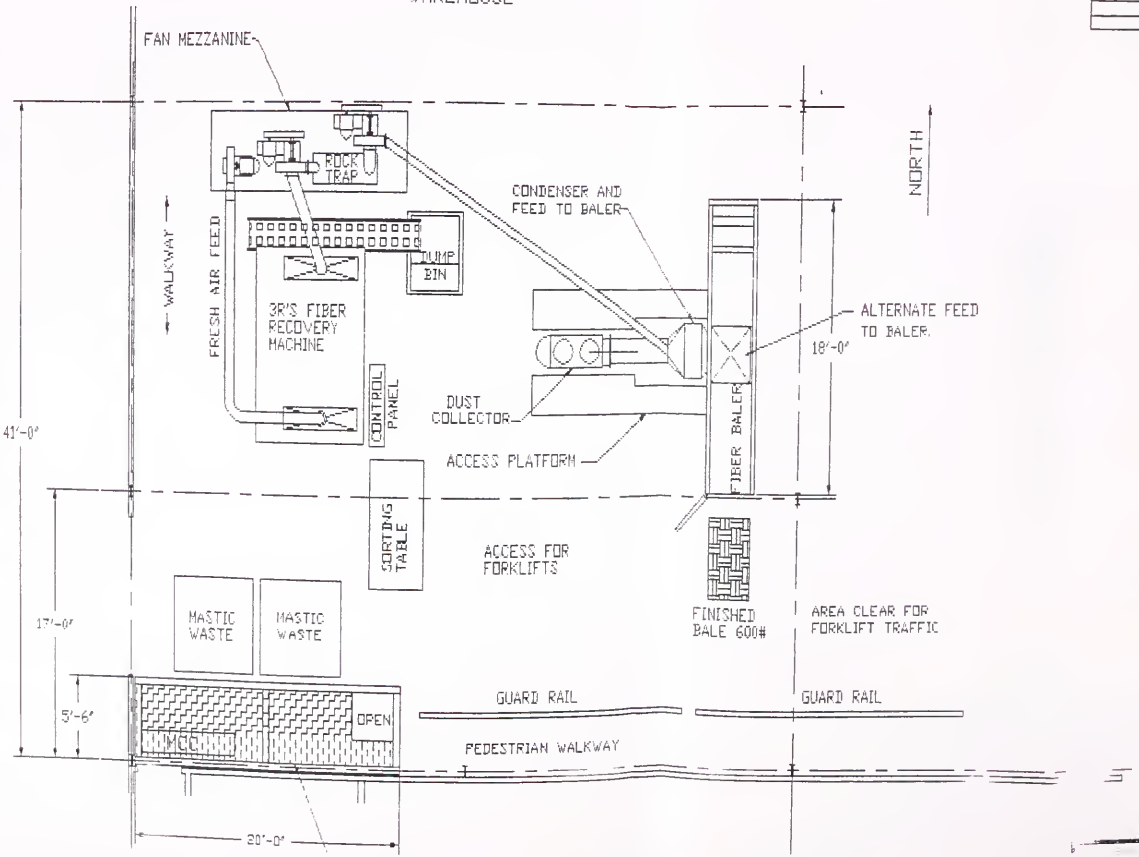
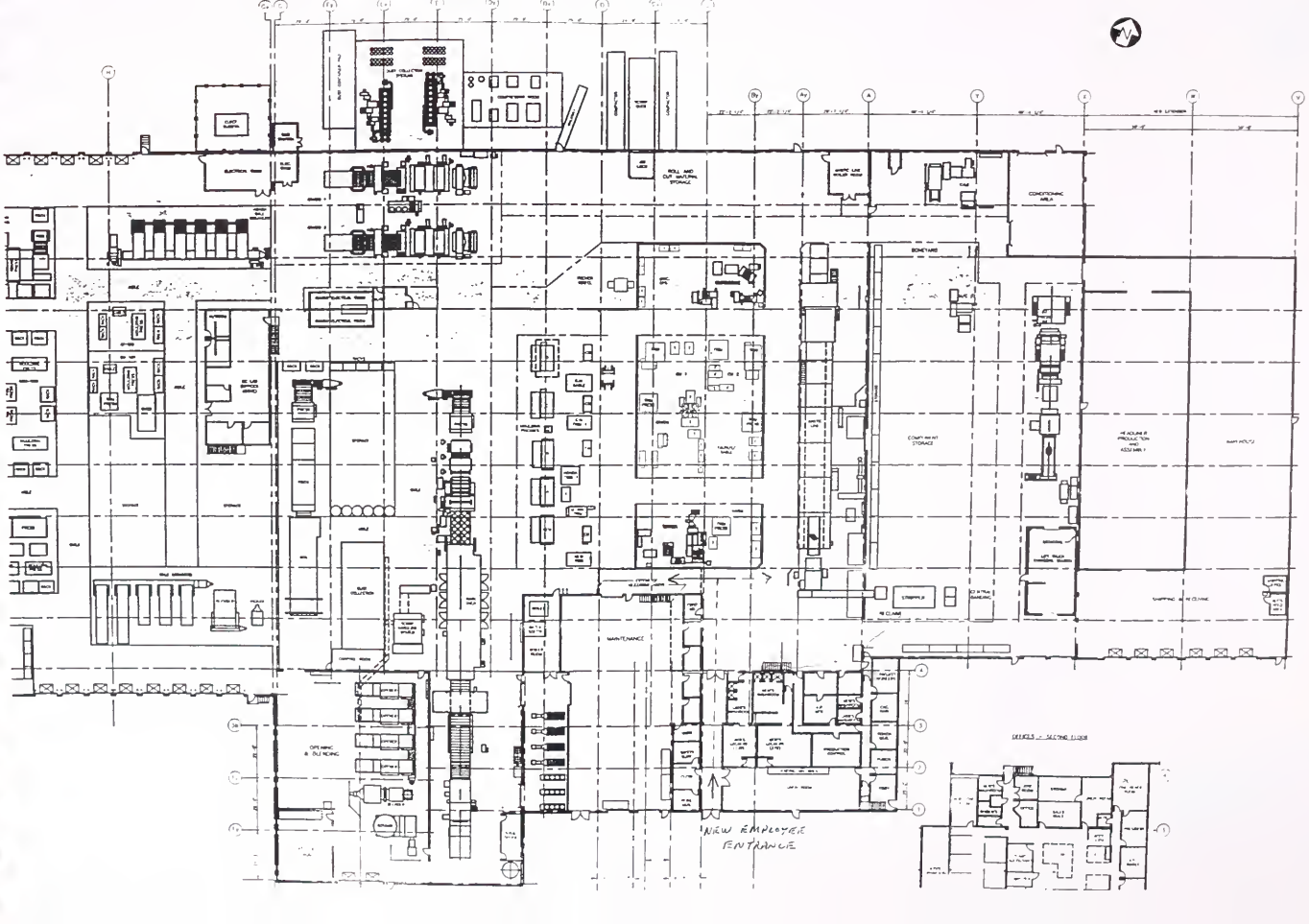
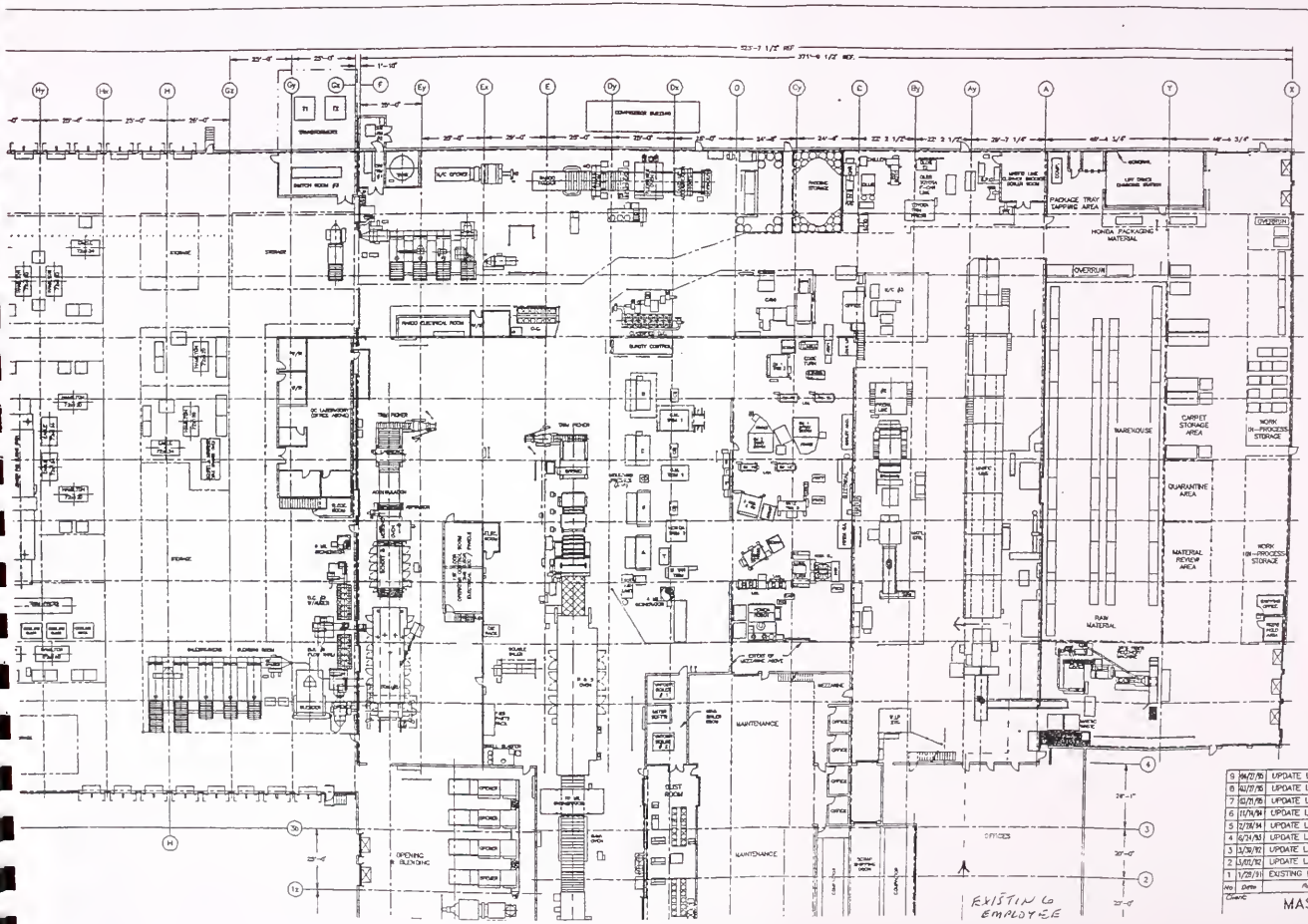
APPENDIX

REV NO.	DESCRIPTION	DATE
NO.1	3R'S PANEL MOVED	MAY 93
NO.2	FAN ADDED AT BALE HEAD	MAY 93
NO.3	FAN MOVED AND ADDED	JUN 93




NEW EMPLOYEE ENTRANCE



9	06/27/16	UPDATE LAYOUT (#178901)	JP
8	02/27/16	UPDATE LAYOUT (#175101)	JP
7	02/27/15	UPDATE LAYOUT (#175101)	JP
6	11/14/14	UPDATE LAYOUT (#164101)	
5	7/28/14	UPDATE LAYOUT (#156901)	
4	6/24/13	UPDATE LAYOUT (#141501)	
3	3/29/12	UPDATE LAYOUT (#140501)	
2	1/02/12	UPDATE LAYOUT (#128101)	
1	1/29/11	EXISTING LAYOUT UPDATED	
No	Date	Revision	By App

Client: MASTICO

Monday, April 27, 1992 The Tillsonburg News

GOING GREEN:

By DOUG SCHMIDT

The provincial government and a Tillsonburg industrial manufacturing company are betting $630,000 that they can make a significant dent in the flow of industrial wastes the company currently sends to the county landfill.

Auto parts manufacturer Mastico Industries Limited has been consistently identified as one of the top three in Oxford County in terms of the volume of wastes it sends to the Salford garbage dump.

But if a pilot project, whose start was announced Friday, is successful, Mastico will be able to cut back the amount of wastes it creates almost entirely, and that within a year.

"The hope for the future is that our company will become an environmental model for Ontario business," said company vice-president and general manager Phil Theis in an April 24 news release.

The province obviously shares that hope. Coinciding with Friday's news release was the announcement that the Ontario government is sharing with the cost of the project's research and development component, to the tune of $346,789.

On hand last week to present the environment ministry's contribution were local MPPs Kimble Sutherland (Oxford) and Norm Jamison (Norfolk).

"Projects like this fit perfectly with our government's desire to develop a "green industry strategy" that will benefit both the province's environment and economic renewal," Sutherland said in the release.

Cutting back on wastes also means cutting back on production costs. Although the county currently does not charge tipping fees at its landfill site, a Mastico spokesperson said the company now pays about $12,000 per month in freight costs alone to transport its wastes to Salford. Cutting back on those costs means increasing the company's competitiveness.

"In the long term, by doing stuff like this, we become more competitive -- we can seize more opportunities in the automotive parts sector," says Theis, whose company's products are used by General Motors, Chrysler, Toyota, Honda and CAMI Automotive in Ingersoll.

And securing market opportunities for the company means added job security for its workers. Mastico's workforce has almost doubled in size in the past two years to over 320 employees in Tillsonburg. Theis and several others who spoke out at Friday's news conference praised Mastico's workers for their co-operation and support in attacking the company's industrial wastes problem.

Among those at Mastico's Tillsonburg facilities for the Friday announcement were Oxford County Warden Ed Down, Tillsonburg's Mayor Cam McKnight and industrial commissioner Fran Brown, Gary Kay, the environment ministry's waste management co-ordinator, Southwestern Region, Canadian Auto Workers Local 1859 president Dennis DeGroote and Marsun Lipsit, an environmental engineer and private waste management consultant who will be guiding the project over the next year.

McKnight asked if there were any assurances the money about to be spent would indeed guarantee a solution to Mastico's current waste woes.

"No," said Lipsit Friday.

Although models have been built and a thick feasibility study completed which all point to the project's viability, Lipsit says the money being committed is for research and development of machinery and installation of a "full-scale reuse/recycling system" the project's backers hope will help divert most of the approximately 8,000 tonnes of wastes Mastico sends to Salford annually.

"The principles we've seen are

sound," said Theis, commenting on the
project's feasibility.

If the "closed loop system" pilo
project is a success, the ministry o
environment's Gary Kay said he is
"ecstatic at the prospect" that Mastico
alone would be responsible for
extending the life of the Salford landfil
site by a further 2.1 years.

Two materials are being targetted in
the waste recovery project, which
involves separating materials that are
combined in the manufacturing o
sound-dampening products for the
automotive industry and rear window
"package trays." Until now, Theis say
there has been "no way to re-use" o
re-claim these combined materials.

The development program covered by
the provincial grant announced Friday
will allow what is currently throwi
away as trim waste to be recovered an
re-introduced into the basic
manufacturing processes, according to
the company.

(Continued

Tillsonburg
Tillsonburg, Ontario, Monday, April 27, 1992

Waste no more. From right: MPPs Kimble Sutherland (Oxford) and Norm Jamison (Norfolk) inspect one of the targetted products Mastico Industries Limited wants to eliminate from the waste stream. Environmental engineer Marsun Lipsit is the consultant for the $630,000 project. At left: Mastico vice-president and general manager Phil Theis. (Doug Schmidt Photo)

GOING GREEN

Mastico Industries and province bet $630,000 they can cut waste at local plant by up to 100 per cent

(Continued from Page 1)

Theis said his company is "hoping to at the very least break even" financially on the recycling initiative. And if the pilot project succeeds, there is also an added marketing potential "down the road" for the system about to be developed -- one of the reasons for the financial support of the environment ministry's Industrial Waste Diversion Program.

"New technology such as Mastico is using will create new business opportunities that Ontario business can export to the global market, and in turn create new industry and employment in Ontario," said Jamison, who is also parliamentary assistant to the Minister of Industry, Trade and Technology.

In a way, the wastes Mastico is now trying to divert from the waste stream would have found their way there in the first place anyway were it not for the company.

The bulk of the raw material Mastico uses in its manufacturing processes -- and the "big culprit" in terms of the company's waste woes, according to Theis -- are actually materials recycled from the textile industry. He said if Mastico were not using those materials, they would "definitely be going to a landfill situation."

He estimates the company currently purchases about 15 million pounds of fibre annually from the textile industry, with the "majority" of that material coming from Montreal.

Jamison praised Mastico as "futuristic-looking," a business where employees have "looked very long at securing the future" of a "very important company to the welfare of this community."

Jake Kok, Mastico's vice-president engineering, says the Ontario Research Centre and the University of Waterloo did "extensive studies" during the 1980s to look at waste reduction, with both initiatives commissioned by the company. The latest push for waste reduction at Mastico came after Lipsit, who is also a Fanshawe College professor, approached the company with his "closed loop system" proposal.

Johnson Controls Ltd., another Tillsonburg company frequently identified in the top three of Oxford County's list of biggest landfill users, recently announced it has been able to cut the volume of wastes it sends to Salford by about 90 per cent over the past year.

These initiatives by local industry come perhaps at just the right time -- Oxford County is about to discuss again the possibility of implementing user fees at the landfill, something that is common at most Ontario landfill sites.

the TILLSONBURG Independent

Tuesday, April 28, 1992 Vol. 3, No. 26 The Voice of Tillsonburg 47¢ + 3¢ GST = 50¢

Mastico embarks on recycling project with $346,000 government grant

By Carol L. McKnight

One of the largest contributors o Oxford County's landfill site, Mastico Industries Ind., is hoping o become a leader in recycling.

To help achieve that goal, the provincial government last week anded over a research grant for 345,789. The company's contri-ution brings project funding to 630,000.

Currently one of the top three contributors to the Salford Landfill Site, Mastico hopes to reduce its waste by about 80 per cent within the next year.

The grant money received Friday, will be used to develop and implement techniques that are now in their infancy. It will also be used for the installation of a full-scale reuse/recycling system, which will reduce and reuse the 8,000 tones of waste Mastico deposits in the landfill site annually.

In becoming more environmentally friendly, the company, which has seen its employment jump from 190 to 300 in the last 24 months, intends to become more competitive.

Mastico's core operation has always been environmentally friendly said Phil Theis, vice-president and general manager of the firm. The company has always used short fibers collected from the floors of Canada's textile and garment industries, to produce mastic. The fibers are needled into pads to form sound-dampening products for the automotive industry.

If not reused by Mastico, the company's Jake Kok estimated about 15 million pounds of fibre would end up in landfill sites annually.

Under the new system, fibre mat used as sound barriers, will be separated and reused. The carpeted board used for the rear window package trays on automobiles, will be separated and returned to the original manufacturer for reuse. The trim waste on both is now shipped to the landfill site.

Like many of the players involved in the company's latest project, Mr. Theis is hopeful, "that our company will become an environmental model for Ontario Business.

Gary Kay, waste management coordinator for the southwest region of the Ministry of the Environment, has worked with Mastico employees to develop recycling within the plant. He praised the company for its 10C per cent recovery approach tc waste reduction and estimated the landfill site's life would be extended another 2.1 years as a result.

The company will apply techniques developed by Marsun Lipsit, an environmental consultant and Fanshawe College professor. He said the program doesn't cover all of the company's waste but applies to the two largest parts of it, which account for about 80 per cent of the total waste stream.

Mr. Lipsit admitted there are no assurances the techniques will work but added, "we've demonstrated ideas that work in practicality."

"The principles are sound," agreed Mr. Theis.

This isn't the first time Mastico has attempted to address its high waste problem. In 1985 the Ontario Research Centre studied the problem, in an attempt to resolve it, and a similar study was done in 1988 by a university.

Mastico's products are used by GM, Chrysler, Toyota, Honda and Cami

lastico Industries Ltd. was awarded a $346,789 grant from the ntario Ministry of the Environment's industrial waste diversion rogram. On hand for Friday's announcement of the grant were, ft to right, Phil Theis, vice president and general manager of astico, Tillsonburg Economic Development Officer Fran Brown, llsonburg-Norfolk MP Norm Jamison and Oxford MP Kimble utherland.

THE ENVIRONMENT

Ambitious waste project funded

Mastico gets $121,000 for developing recycling machine

By Doug Edgar

Picture a 17-storey building, with four apartments to a floor, made out of felt-like scrap automotive acoustical dampening material being landfilled each year.

That's the volume of such scrap — about 15,000 cubic yards, or about 8,000 tonnes — a machine being designed for Tillsonburg's Mastico plant is expected to divert from the Salford landfill site, and put back through the plant's production line each year.

A $120,961 cheque was presented to Phil Theis, vice president and general manager of Mastico Industries, by local provincial parliamentarians Norm Jamison (Norfolk) and Kimble Sutherland (Oxford) on Friday, to support ongoing efforts to develop the machine. The cheque represents part of a total approved amount of $346,789 made available by the provincial environment ministry through the Industrial Waste Diversion Program.

The company has invested money of its own in the project, almost matching what the province has put in.

"This is a major milestone in this project," Mr. Theis said shortly before receiving the cheque. He said the machine is slated to be up and running in about two months.

Mr. Jamison said the project creates a "win-win" situation.

"There are benefits to companies that move in this direction and there are benefits to the community," he said, calling the project a "fine example of industry becoming greener."

Companies can become more efficient by taking what would normally be waste material and turning into a usable product, he said, while the community at large benefits from having the life span of its landfill extended.

"Industries are valuable partners in the province's ongoing commitment to reduce waste," Mr. Sutherland said in a press release. "Ventures like the Mastico Industries project demonstrate that new techniques can provide significant benefits to both Ontario's industry and the environment."

The company plans to reuse scrap cut from acoustical barrier material produced for cars.

The machine is to work using a heated belt to grab onto the scrap material, which is composed of a plastic film, tar, and fibres which has been made into a kind of felt, said Marsun Lipsit, an environmental engineer who developed the technique.

The plastic film adheres to the heated belt and the fibres are then stripped away, Mr. Lipsit said.

"We literally pick the fibres back off the piece," he said.

The plastic and tar are combined and then run back through the production line as well, he said.

This will represent a second chance for the material to be put to a good use, since the company gets its supply of fibres from the waste of the textile industry.

Mr. Theis said the money received Friday, the second provincial government installment for the project, is to go into the already-started construction of a production line machine.

The company had previously received about $20,000 of the allotted money for research and development.

A prototype for the project was successfully demonstrated to the Ministry of the Environment representatives last November.

A cheque for $120,961, to go toward the manufacture of a machine to reclaim and reuse previously landfill-bound scrap material at the plant, is presented to Mastico Industries Ltd. vice president and general manager Phil Theis by Norfolk MPP Norm Jamison (right) and Oxford MPP Kimble Sutherland (left). (Staff Photo)

BUSINESS

Mastico receives $120,961 from province

By STEPHAN KLEISER

Mastico Industries Limited has received a cheque for $120,961 from the Ministry of Environment for a project that will greatly reduce its industrial waste stream.

MPPs Norm Jamison (Norfolk) and Kimble Sutherland (Oxford) presented the cheque Friday on behalf of Environment Minister Ruth Grier.

The money, which has been allocated from MOE's Industrial Waste Diversion Program, represents the second instalment of an amount of up to $346,789 toward an estimated project cost of about $630,000. The company will fund the other half of the project.

In April, the provincial government and the auto parts manufacturer agreed to a partnership to develop machinery and practices which will significantly reduce and reuse the 8,000 tonnes of waste Mastico previously deposited at the Salford landfill site.

"The potential for lessening the waste to the landfill helps not only the company, but the community as well," said Jamison. "Mastico is a forward looking company. This makes them, in my opinion, a world leader by making the company more productive and competitive."

"Mastico shows good leadership by being very competitive especially during the recession," said Sutherland, who added the project is coming along nicely. "I'm glad the province can help."

Company vice president and general manager Phil Theis called the project a good co-operative effort between forward looking industry, environmental concerns and the ministry.

Mastico has just completed a prototype of a machine designed to recover and reuse waste that is currently being thrown away, and re-introduce it into the manufacturing process. Theis said it will be a couple of months before the actual machine will be in the plant but work with the prototype has been a success.

MPPs Norm Jamison (Norfolk), right, and Kimble Sutherland (Oxford), left, presented a cheque for $120,961 to Mastico Industries Limited on behalf of Environment Minister Ruth Grier. Phil Theis, company vice president and general manager accepted the grant. (Stephan Kleiser photo)

SATURDAY

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To help reduce garbage

Province gives Mastico $120,000

By SENTINEL-REVIEW STAFF

TILLSONBURG - A Tillsonburg company received a $120,000 grant from the provincial government Friday to help find new ways to reduce the amount of garbage it produces.

Mastico Industries Ltd. got the money as part of a $346,000 grant approved by the Ontario Ministry of the Environment earlier this year.

The money is to be used to research and develop machinery and practices which will reduce and reuse garbage previously going to Oxford County's landfill site near Salford.

"Industries are valuable partners in the province's ongoing commitment to reduce waste," said MPP Kimble Sutherland (Oxford-NDP).

"Ventures like the Mastico Industries project demonstrate that new techniques can provide significant benefits to both Ontario's industry and the environment."

The company hopes to cut its landfill waste by 8,000 tonnes.

With plans to reuse in-plant waste from the production of molded car parts, the company will protect the environment and reduce costs. In addition to reusing in-plant waste, Mastico already uses a combination of waste textile fibres and asphalt to manufacture its products for the automotive industry.

"This represents a major milestone in the development of the processes to recycle our waste stream," said Phil Theis, vice-president and general manager of Mastico Industries.

In November, Mastico successfully completed and demonstrated a prototype of its proposed equipment for Ministry of the Environment representatives.

The production equipment is under construction and full-scale operations should be ready by March of this year.